WHAT IS CLAIMED IS:

1. A collection of particles comprising metal vanadium oxide, the particles having an average diameter less than about 500 nm.

2. The collection of particles of claim 1 wherein the particles have an average diameter from about 5 nm to about 100 nm

3. The collection of particles of claim 1 wherein the particles have an average diameter from about 5 nm to about 50 nm.

4. The collection of particles of claim 1 wherein the metal vanadium oxide comprises silver vanadium oxide.

5. The collection of particles of claim 1 wherein the metal vanadium oxide comprises $Ag_2V_4O_{11}$.

6. The collection of particles of claim 1 wherein effectively no particles have a diameter greater than about four times the average diameter of the collection of particles.

7. The collection of particles of claim 1 wherein effectively no particles have a diameter greater than about two times the average diameter of the collection of particles.

8. The collection of particles of claim 1 wherein the collection of particles have a distribution of particle sizes such that at least about 95 percent of the particles have a diameter greater than about 40 percent of the average diameter and less than about 160 percent of the average diameter.

9. The collection of particles of claim 1 wherein the collection of particles have a distribution of particle sizes such that at least about 95 percent of the particles have a diameter greater than about 60

percent of the average diameter and less than about 140 percent of the average diameter.

10. A method of producing particles of metal vanadium oxide comprising heating a mixture of vanadium oxide particles with a non-vanadium metal compound, the vanadium oxide particles having an average diameter less than about 500 nm.

11. The method of claim 10 wherein the vanadium oxide particles have an average diameter from about 5 nm to about 100 nm.

12. The method of claim 10 wherein the non-vanadium metal compound comprises silver nitrate.

13. The method of claim 10 wherein the vanadium oxide particles comprise crystalline V_2O_5.

14. The method of claim 10 wherein the heating is performed at a maximum temperature from about 200°C to about 330°C.

15. The method of claim 10 wherein the heating is performed at a maximum temperature from about 200°C to about 300°C.

16. The method of claim 10 wherein the heating is performed for less than about 20 hours.

17. A battery comprising a positive electrode having active particles comprising metal vanadium oxide within a binder, the active particles having an average diameter less than about 500 nm.

18. The battery of claim 17 wherein the active particles have an average diameter from about 5 nm to about 100 nm.

19. The battery of claim 17 wherein the metal vanadium oxide comprises silver vanadium oxide.

20. The battery of claim 19 wherein the silver vanadium oxide comprises $Ag_2V_4O_{11}$.

21. The battery of claim 17 wherein the metal vanadium oxide comprises copper vanadium oxide.

22. The battery of claim 17 wherein the positive electrode further comprises supplementary, electrically conductive particles.

23. The battery of claim 17 wherein effectively no active particles have a diameter greater than about four times the average diameter of the collection of active particles.